

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
27 May 2004 (27.05.2004)

PCT

(10) International Publication Number  
**WO 2004/044213 A1**

(51) International Patent Classification<sup>7</sup>: **C12P 7/62,**  
C08G 63/06

(21) International Application Number:  
PCT/JP2003/013531

(22) International Filing Date: 23 October 2003 (23.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
NO. 2002-310250 24 October 2002 (24.10.2002) JP  
NO. 2003-356748 16 October 2003 (16.10.2003) JP

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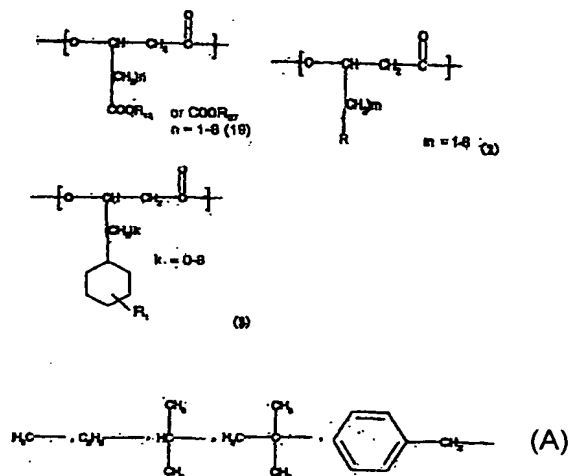
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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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(54) Title: NOVEL POLYHYDROXY ALKANOATE COPOLYMER INCLUDING WITHIN MOLECULE UNIT HAVING VINYL GROUP OR CARBOXYL GROUP IN SIDE CHAIN, AND PRODUCING METHOD THEREFOR



(57) Abstract: The invention provides a PHA copolymer including at least a 3-hydroxy- $\omega$ -carboxyalkanoic acid represented by a formula (19) or (32) and simultaneously at least a unit represented by a formula (2) or a formula (3) in a molecule, a precursor PHA copolymer having a corresponding vinyl group or a corresponding alkoxycarbonyl group, a biosynthesis method thereof by microorganisms, and a method of producing a desired PHA copolymer from the precursor PHA copolymer: (wherein k, m, n are integers;  $R_{18}$  represents H, Na, K,  $R_{17}$  represents (A);  $R_1$  represents a substituent on a cyclohexyl group and represents H, CN,  $NO_2$ , a halogen atom,  $CH_3$ ,  $C_2H_5$ ,  $C_3H_7$ ,  $CF_3$ ,  $C_2F_5$ , or  $C_3F_7$ ; R includes a residue including a phenyl structure or a thienyl structure; these being independent for each unit).



(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*